

# **K.M.G. COLLEGE OF ARTS & SCIENCE, GUDIYATTAM.**

## **P.G. & RESEARCH DEPARTMENT OF CHEMISTRY**

**Programme Name : B.Sc., CHEMISTRY**

### **Program Outcomes (POs)**

On completion of the UG Programme in Chemistry, the students will be able to:

**PO1** - Describe the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in day-to-day life.

**PO2** - Employ critical thinking for solving problems using basic chemistry knowledge and concepts.

**PO3** - Acquire skills in handling scientific instruments, planning and performing laboratory experiments and drawing logical inferences from the chemical experiments.

**PO4** - Analyze the given scientific data critically and systematically to draw a logical conclusion.

**PO5** - Develop various communication skills such as reading, listening, speaking, etc., to express ideas and views clearly and effectively.

**PO6** - Create an intellectual curiosity and ability to think in a scientific manner and get sensitized to social and environmental realities.

**PO7** - Develop an interest in pursuing higher studies in Chemistry and related subjects which are relevant to employment and entrepreneurship.

**PO8** - Capable of self-paced and self-directed learning aimed at personal development and for improving knowledge/skill development and reskilling.

**PO9** - Demonstrate the knowledge of professional and ethical practices.

**PO10** - Integrate the knowledge and skills developed in multidisciplinary environments and function effectively as an individual or a leader and contribute towards the needs of the society.

**Program specific Outcomes:**

<b>S.No</b>	<b><u>OUTCOMES</u></b>
<b>PSO-1</b>	Students will be able to explain fundamental knowledge of chemistry, physics and mathematics.
<b>PSO-2</b>	To opt for higher education, disciplinary & multi-disciplinary research and to be a life-long learner.
<b>PSO-3</b>	Students will be able to identify chemical formulae and solve numerical problems.
<b>PSO-4</b>	To provide the professional services to industry, research organization and institutes.
<b>PSO-5</b>	Students will be able to understand good laboratory practices and safety.

## SEMESTER I

Sub.Name: GENERAL CHEMISTRY-I

No.of Hours per week:6

Sub.Code:BCH 11

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – I YEAR SEMESTER-I (REGULATION: 2017-2018)	GENERAL CHEMISTRY-I	04	CO1- Recollect the Chemistry of Quantum Numbers. CO2- Review and apply periodicity of properties. CO3- Discuss various types of bonding through VB & MO theories. CO4- Name simple Aliphatic and Aromatic Compounds. CO5- Illustrate and apply electron displacement effects and reaction mechanisms. CO6- Elaborate the basic concepts of solid, liquid and gaseous states. CO7- Apply the principles of Volumetric Analysis.

**GENERAL CHEMISTRY – I**

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	S	M	M	S	M	S	M
CO2	S	M	M	S	M	S	S	M	M	S
CO3	S	M	S	S	S	M	M	S	S	M
CO4	M	M	S	S	M	S	S	M	M	S
CO5	M	S	M	M	S	M	S	S	S	M
CO6	S	M	S	S	S	M	M	S	S	M
CO7	M	M	S	S	M	S	S	M	M	S

## SEMESTER I

Sub.Name: GENERAL CHEMISTRY-II

No.of Hours per week:4

Sub.Code:BCH 21

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – I YEAR SEMESTER-II (REGULATION: 2017-2018)	GENERAL CHEMISTRY-II	04	CO1- Compare the basic properties of elements and their Compounds of s & p – block elements. CO2- Explain the reaction mechanisms of alkanes, alkenes and alkynes and predict the products. CO3- Classify dienes and analyze the stability of alkanes, alkenes and cycloalkanes. CO4- Recollect the basic concepts of Quantum Theory CO5- Recollect the basic concepts of Thermodynamics. CO6- Calculate the thermodynamic parameters using thermo chemical equations and data.

**GENERAL CHEMISTRY - II**

CoS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	S	M	M	S	M	S	M
CO2	S	M	S	M	M	S	S	M	M	S
CO3	S	M	M	S	S	M	M	S	S	M
CO4	M	S	S	M	M	S	S	M	M	S
CO5	M	S	M	M	S	M	S	M	S	M
CO6	M	S	S	M	M	S	S	M	M	S

## SEMESTER III

Sub.Name: GENERAL CHEMISTRY-I II

No.of Hours per week:3

Sub.Code:BCH 31

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – II YEAR SEMESTER-III (REGULATION: 2017-2018)	GENERAL CHEMISTRY-III	04	CO1- Explain the basic principles of Inorganic Qualitative Analysis. CO2- Compare the properties of Carbon, Nitrogen and Oxygen elements and their compounds. CO3- Apply Huckel's rule and predict the Aromaticity of compounds. CO4- Discuss the mechanism of substitution and elimination reactions of Aliphatic compounds. CO5- Discuss the mechanism of substitution and elimination reactions Aromatic compounds. CO6- Explain the Thermodynamic second law and predict the spontaneity of a process.

**GENERAL CHEMISTRY - III**

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	M	S	M	S	M	M	S	M
CO2	M	M	S	M	M	S	M	S	M	S
CO3	S	S	M	S	M	S	M	S	M	M
CO4	S	M	S	M	M	M	S	M	S	S
CO5	M	S	M	M	S	M	M	S	M	S
CO6	M	S	M	S	S	M	S	M	M	M

**SEMESTER III**

Sub.Name: WATER TREATMENT ANALYSIS

No.of Hours per week:3

Sub.Code:BSCH 32

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – II YEAR SEMESTER-III (REGULATION: 2017-2018)	WATER TREATMENT ANALYSIS	02	<p>CO1- Classify water based on the presence of dissolved salts in it.</p> <p>CO2- Explain the various methods to make the water potable.</p> <p>CO3- Discuss the softening methods of hardwater and determine hardness of water.</p> <p>CO4- Understand electro dialysis and RO methods to desalinate Brackish water.</p> <p>CO5- Analyse the presence of Chemical substances in water indicative of pollution by measuring BOD and</p> <p>CO6. Illustrate the methods used for biological examination of water</p>

**WATER TREATMENT AND ANALYSIS**

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	S	M	S	S	M	S	M
CO2	M	S	M	S	M	S	M	S	M	S
CO3	S	M	S	S	S	M	M	S	S	S
CO4	M	S	M	S	S	M	S	M	M	M
CO5	M	M	S	M	M	M	M	S	S	M
CO6	M	S	M	S	S	M	S	M	M	M

## SEMESTER III

Sub.Name: MEDICINAL CHEMISTRY

No.of Hours per week:3

Sub.Code: BNCH 33

## Course Outcomes

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – II YEAR SEMESTER-III (REGULATION: 2017-2018)	MEDICINAL CHEMISTRY	02	<p>CO1-Understand the composition of blood and biochemical analysis of Urine and Serum</p> <p>CO2Gain knowledge about uses and side effects of Antibiotics, Antipyretics, Analgesics and tranquilizers.</p> <p>CO3Explain the causes, symptoms and treatment of Blood pressure, Diabetes, Cancer and AIDS.</p> <p>CO4Classify and understand the sources and diseases caused by deficiency of Vitamins.</p> <p>CO5Analyse the therapeutic importances of Indian Medicinal plants</p> <p>CO6 Describe the first Aid and Safety treatment of Shock, Haemorrhage, Cuts and wounds and Burns</p>

## MEDICINAL CHEMISTRY

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	S	M	S	S	M	S	M
CO2	M	S	M	S	M	S	M	S	M	S
CO3	S	M	S	S	S	M	M	S	S	S
CO4	M	S	M	S	S	M	S	M	M	M
CO5	M	M	S	M	M	M	M	S	S	M
CO6	M	S	M	S	S	M	S	M	M	M

**SEMESTER IV**

Sub.Name: GENERAL CHEMISTRY-IV

No.of Hours per week:3

Sub.Code: BCH 41

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – II YEAR SEMESTER-IV (REGULATION: 2017-2018)	GENERAL CHEMISTRY-IV	03	CO1- Classify water based on the presence of dissolved salts in it. CO2- Explain the various methods to make the water potable. CO3- Determine the hardness of water and discuss the softening methods of hard water. CO4- Discuss electro dialysis and RO methods to desalinate brackish water. CO5- Analyze the presence of chemical substances in water indicative of pollution by measuring BOD and COD. CO6- the methods used for biological examination of water

**GENERAL CHEMISTRY - IV**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	S	M	S	S	M	S	M
CO2	M	S	S	M	M	S	M	S	M	S
CO3	S	S	M	S	S	M	M	S	M	S
CO4	M	S	M	S	S	M	S	M	S	M
CO5	M	M	S	M	M	M	M	S	M	S
CO6	S	S	M	S	S	M	M	S	M	S



**SEMESTER IV**

Sub.Name: FOOD CHEMISTRY

No.of Hours per week:3

Sub.Code: BSCH42

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – II YEAR SEMESTER-IV (REGULATION: 2017-2018)	FOOD CHEMISTRY	03	CO1- Describe the structures and nutritive values of cereals, Pulses and sugar and their medicinal values. CO2- Illustrate the composition and nutritive values of Vegetables, Fruits, Milk, Egg and soya beans. CO3- Define and classify Beverages and functions of appetizers. CO4- Explain the methods of preservation of foods. CO5- Discuss about Food Additives and their functions.

**FOOD CHEMISTRY**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	S	M	S	S	M	S	M
CO2	M	S	M	M	S	S	M	S	M	S
CO3	M	S	M	S	M	S	M	S	M	S
CO4	M	S	M	S	S	M	S	M	S	M
CO5	S	M	S	M	M	M	M	S	M	S

## SEMESTER IV

Sub.Name: CHEMISTRY IN EVERY DAY LIFE

No.of Hours per week:02

Sub.Code: BNCH43

### Course Outcomes

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – II YEAR SEMESTER-IV  (REGULATION: 2017-2018)	CHEMISTRY IN EVERY DAY LIFE	02	<p>CO1 Explain the preparations of cosmetics, soaps and detergents and the Hazards of Cosmetics used in everyday life.</p> <p>CO2 Identify Adulterants in various food items.</p> <p>CO3 Define and classify Vitamins and understand their physiological importance.</p> <p>CO 4 Describe Food preservative methods.</p> <p>CO 5 Define Antipyretics, Analgesics, Anesthetics and Sedatives.</p> <p>CO 6 Discuss the preparation and applications of plastics, Resins, Rubbers.</p> <p>CO 7 Classify fertilizers and describe their uses and Hazards.</p> <p>CO 8 Explain advantages and disadvantages of natural and artificial sweetening agents.</p>

### CHEMISTRY IN EVERY DAY LIFE

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	S	M	M	S	M	S	M
CO2	M	S	S	M	S	M	M	S	M	S
CO3	S	S	M	S	M	S	M	S	M	S
CO4	M	M	M	S	S	M	S	M	S	M
CO5	S	M	S	M	M	M	M	S	M	S
CO6	M	S	S	M	S	M	M	S	M	S
CO7	S	S	M	S	M	S	M	S	M	S
CO8	M	M	M	S	S	M	S	M	S	M

## SEMESTER V

Sub.Name: INORGANIC CHEMISTRY-I

No.of Hours per week:05

Sub.Code: BCH51

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – III YEAR SEMESTER-V (REGULATION: 2017-2018)	INORGANIC CHEMISTRY-I	05	CO1- Compare the properties of Halogens and their Compounds. CO2- Recollect the basic concepts and nomenclature of Co-ordination Compounds. CO3- Explain the theories of Co-ordination Compounds. CO4- Compare VBT with MOT and apply Complexes in qualitative and quantitative analyses. CO5- Calculate the CFSE Values of Octahedral and Tetrahedral Complexes. CO6- Analyze the bonding and structure of metallic carbonyls. CO7- Draw the structures of ionic crystals and explain the defects in solids.

**INORGANIC CHEMISTRY - I**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	M	M	S	S	M	S	M
CO2	S	M	M	M	S	S	M	S	M	S
CO3	M	S	S	S	M	S	M	S	M	S
CO4	M	S	M	S	S	M	S	M	S	M
CO5	S	M	S	M	M	M	M	S	M	S
CO6	S	M	M	M	S	S	M	S	M	S
CO7	M	S	S	S	M	S	M	S	M	S

## SEMESTER V

Sub.Name: ORGANIC CHEMISTRY-I

No.of Hours per week:5

Sub.Code: BCH52

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – III YEAR SEMESTER-V (REGULATION: 2017-2018)	ORGANIC CHEMISTRY-I	05	CO1- Elucidate the structures of saccharides. CO2- Assign the stereo configuration of Organic Compounds. CO3- Compare the Conformation and Configuration of cyclohexanes and substituted cyclohexanes. CO4- Explain the preparation, properties and uses of Nitro alkanes. CO5- Apply different reagents in studying various Organic reactions. CO6- Explain the mechanism of Organic named reactions. CO7- Explain the synthesis and properties of five and six membered heterocyclic compounds and condensed heterocyclic compounds. CO8- Compare the basicity of heterocyclic Compounds.

**ORGANIC CHEMISTRY - I**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	M	S	M	S	S	M	S	M
CO2	M	M	S	M	S	S	M	S	M	S
CO3	S	S	M	S	M	S	M	S	S	S
CO4	S	M	M	S	S	M	S	M	S	M
CO5	M	S	S	M	M	S	S	M	S	M
CO6	S	M	M	M	S	S	M	S	M	S
CO7	M	S	S	S	M	S	M	S	M	S
CO8	M	S	M	S	S	M	S	M	S	M

## SEMESTER V

Sub.Name: PHYSICAL CHEMISTRY -I

No.of Hours per week:5

Sub.Code:BCH53

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – III YEAR SEMESTER-V (REGULATION : 2017-2018)	PHYSICAL CHEMISTRY - I	05	CO1- Explain the Thermodynamics of ideal and Non-ideal solutions, Nernst distribution law and its applications. CO2- Draw and explain phase diagrams of one Component and two Component systems having congruent and incongruent melting points. CO3- Derive law of Chemical equilibrium and Van't Hoff isotherm. CO4- Determine molar mass from the colligative properties. CO5- Explain variation of conductivity with dilution, measurement of conductivity and concept of Transport Number and its determination. CO6- Explain Debye-Huckel Theory of strong electrolytes. CO7- Apply conductivity measurements and explain conductometric titrations. CO8- Explain buffer action and derive Henderson equation and pH of aqueous salt solutions.

## PHYSICAL CHEMISTRY - I

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	S	S	M	S	S
CO2	M	M	S	M	M	S	M	S	S	M
CO3	S	S	M	S	S	M	M	M	M	S
CO4	S	M	M	S	S	S	S	M	S	M
CO5	M	S	S	M	M	M	M	S	M	S
CO6	S	M	M	S	S	M	S	M	S	M
CO7	M	S	S	M	M	S	S	M	S	M
CO8	S	M	M	M	S	S	M	S	M	S

**SEMESTER V**

Sub.Name: ANALYTICAL CHEMISTRY-I

No.of Hours per week:3

Sub.Code: BECH54A

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – III YEAR SEMESTER-V (REGULATION : 2017-2018)	ANALYTICAL CHEMISTRY-I	03	CO1- Analyze Data and explain the methods of purification of solids. CO2- Purify solid and liquid Organic Compounds. CO3- Explain the concept of Gravimetric Analysis. CO4- Describe the principles, Instrumentation and applications of UV, Visible, Microwave, IR and Raman Spectroscopy. CO5- Determine the structure of Organic Compounds using various spectral techniques.

**ANALYTICAL CHEMISTRY -**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	S	M	S	S	M	S	S
CO2	S	M	S	M	S	S	M	S	M	M
CO3	S	S	M	S	M	S	M	M	S	S
CO4	S	M	S	S	S	M	S	M	S	M
CO5	M	S	M	M	M	M	M	S	M	M

Sub.Name: APPLIED CHEMISTRY

No.of Hours per week:3

Sub.Code: BSCH56

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – III YEAR SEMESTER-V (REGULATION : 2017-2018)	APPLIED CHEMISTRY	03	CO1- Explain the refining process of petroleum and differentiate between Thermal and Catalytic Cracking. CO2- Explain the various processes involved in paper technology. CO3- Recover glucose from molasses and estimate sugar. CO4- Prepare alcohol from molasses. CO5- Explain the Proximate and Ultimate analysis of Coal. CO6- Describe Chemical changes occurring in Milk during processing. CO7- Define the principle involved in photography. CO8- Explain the need for making milk powder and principle involved in drying process

**SKILL BASED SUBJECT  
APPLIED CHEMISTRY:**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	S	S	M	S	M
CO2	M	S	M	M	S	S	M	S	M	S
CO3	S	M	S	M	M	M	M	S	S	M
CO4	S	M	M	S	S	S	S	M	S	M
CO5	M	M	S	M	M	M	M	S	M	S
CO6	S	M	M	S	S	M	S	M	S	M
CO7	M	S	S	M	M	S	S	M	S	M
CO8	S	M	M	M	S	S	M	S	M	S

SEMESTER V

Sub.Name: . PHARMACEUTICAL CHEMISTRY No.of Hours per week:3

Sub.Code:BECH55A

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – III YEAR SEMESTER-VI (REGULATION: 2017-2018)	PHARMACEUTICAL  CHEMISTRY	03	CO1 Define the terms involved in pharmaceutical chemistry.  CO2 Explain the causes, symptoms and treatment of common diseases.  CO3 Explain the composition of blood.  CO4 Explain the role of antibacterial, antiseptics, vitamins, analgesics and anesthetics.  CO5 Apply the therapeutic importance of Indian medicinal plants.  CO6 Classify hormones and explain their functions.

**PHARMACEUTICAL CHEMISTRY:**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	M	S	S	S	M	S	S
CO2	S	S	M	S	S	S	M	S	M	M
CO3	M	M	S	S	M	S	M	M	S	S
CO4	M	S	M	S	S	M	S	M	M	S
CO5	S	M	S	M	M	M	M	S	M	S
CO6	S	M	S	M	S	S	S	M	S	S

SEMESTER VI



Sub.Name: INORGANIC CHEMISTRY-II

No.of Hours per week:6

Sub.Code: BCH61

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – III YEAR SEMESTER-VI (REGULATION: 2017-2018)	INORGANIC CHEMISTRY -II	05	CO1- Explain the stability of nuclides in terms of N/P ratio, mass defect, binding energy and packing fraction. CO2- Describe natural and artificial radioactivity and compare high energy nuclear reactions. CO3- Describe the various processes involved in Metallurgy. CO4- Compare the properties of d-block elements. CO5- Compare the properties of lanthanides and actinides. CO6- Classify Organometallic Compounds CO7- Discuss the biological importance of Fe, Cu and Zn.

**INORGANIC CHEMISTRY - II**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	M	S	S	M	S	M
CO2	M	S	M	M	S	S	M	S	M	S
CO3	S	M	S	M	M	S	M	M	S	M
CO4	M	M	M	S	S	M	S	M	M	S
CO5	M	S	S	M	M	M	M	S	M	M
CO6	S	M	S	M	M	S	M	M	S	M
CO7	M	M	M	S	S	M	S	M	M	S

## SEMESTER VI

Sub.Name: ORGANIC CHEMISTRY-II

No.of Hours per week:4

Sub.Code:BCH 62

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – III YEAR SEMESTER-VI (REGULATION: 2017-2018)	ORGANIC CHEMISTRY-II	04	CO1- Explain the mechanisms of inter and intra molecular rearrangements. CO2- Classify amino acids and explain their preparation and properties and synthesis of Peptides. CO3- Differentiate between DNA and RNA. CO4- Explain primary and secondary structures of proteins. CO5- Elucidate the structures of Antibiotics, Alkaloids. CO6- Elucidate the structures of Terpenoids.

**ORGANIC CHEMISTRY - II**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	S	M	S	S	M	S	S
CO2	S	S	M	M	S	S	M	S	M	M
CO3	M	M	S	M	M	S	M	M	S	S
CO4	S	M	M	S	S	M	S	M	M	S
CO5	M	S	S	M	M	M	M	S	M	M
CO6	M	M	S	M	M	S	M	M	S	S

## SEMESTER VI

Sub.Name: PHYSICAL CHEMISTRY –II

No.of Hours per week:4

Sub.Code: BCH63

### Course Outcomes

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – III YEAR SEMESTER-VI (REGULATION: 2017-2018)	PHYSICAL CHEMISTRY – II	04	CO1- Derive Nernst equation and explain Cell reactions. CO2- Explain Concentration Cells and polarization. CO3- Derive rate constant expressions for zero, first, second and third order reactions and determine the order of a reaction. CO4- Compare Collision theory and ARRT. CO5- Explain Lindemann's theory of unimolecular reactions. CO6- Explain Langmuir Theory of Adsorption. CO7- Derive Michaelis-Menten equation for enzyme catalyzed reactions. CO8- State laws of photochemistry and explain the kinetics of photo chemical reactions. CO9- Explain various Photo physical processes and Photosensitized reactions.

### PHYSICAL CHEMISTRY - II

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	S	M	S	M	S	S
CO2	M	S	S	M	M	S	M	S	M	S
CO3	S	M	M	S	M	S	M	M	S	M
CO4	M	S	M	S	S	M	S	M	M	S
CO5	S	S	M	S	M	M	M	S	M	M
CO6	M	M	S	M	M	S	M	M	S	S
CO7	S	M	M	S	S	M	S	M	M	S
CO8	M	S	S	M	M	M	M	S	M	M
CO9	M	M	S	M	M	S	M	M	S	S

**SEMESTER VI**

Sub.Name: ANALYTICAL CHEMISTRY-II No.of Hours per week:4

Sub.Code:BECH64A

**Course Outcomes**

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – III YEAR SEMESTER-VI (REGULATION: 2017-2018)	ANALYTICAL CHEMISTRY-II	03	CO1- Explain the principles and techniques of column, paper and thin layer chromatography, CO2- Explain ion-exchange, high - pressure liquid and gas chromatography CO3- Elucidate the structure of organic compounds using NMR,Mass and ESR spectroscopy . CO4- Discuss the principle and applications of TGA, DTA and thermometric titrations. CO5- Explain the principle of polarography and amperometric titrations

**INTERNAL ELECTIVE****ANALYTICAL CHEMISTRY - II**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	M	S	S	S	M	S	S
CO2	S	S	M	S	S	S	M	S	M	M
CO3	M	M	S	S	M	S	M	M	S	S
CO4	M	S	M	S	S	M	S	M	M	S
CO5	S	M	S	M	M	M	M	S	M	S

## SEMESTER VI

Sub.Name: AGRICULTURE AND LEATHER CHEMISTRY

No.of Hours per week:3

Sub.Code:BSCH65

### Course Outcomes

Semester	Course Name	Course Credit	Course Outcomes
B.Sc – III YEAR SEMESTER-VI (REGULATION: 2017-2018)	AGRICULTURE AND LEATHER CHEMISTRY	02	CO1- Explain the structure Texture and Chemical properties of soil CO2- Define and classify fertilizers and illustrate the requirements of a good fertilizer. CO3- Control the pollution caused by fertilizers. CO4- Define and classify insecticides. CO5- Discuss leather tanning methods. CO6- Control pollution caused by tannery effluents.

### AGRICULTURE AND LEATHER CHEMISTRY

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	M	S	M	S	M	S	M
CO2	S	M	M	S	S	M	M	S	M	S
CO3	M	M	S	M	S	S	M	M	S	S
CO4	S	M	M	S	M	M	S	M	M	S
CO5	M	S	S	S	M	M	M	S	M	M
CO6	S	M	M	S	M	M	S	M	M	S

HOD





